

To Dr. C. Foster with the authors respects
Corson (J. W.)

FUNCTIONAL

AND

SYMPATHETIC AFFECTIONS OF THE HEART:

A PAPER READ BEFORE THE

SOCIETY OF STATISTICAL MEDICINE.

BY JOHN W. CORSON, M. D.,

LATE PHYSICIAN TO THE BROOKLYN CITY HOSPITAL, PHYSICIAN TO THE N. Y. DISPENSARY.

(From the New-York Journal of Medicine for January, 1854)

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Functional and Sympathetic Affections of the Heart.

It has latterly become a fearful thing, after certain taps on the chest, and listening through a mysterious tube, to pronounce in the patient's hearing, "*Disease of the Heart.*" For reasons that will appear, we venture in preface a frank confession of delusions and difficulties. We can make almost any man's heart palpitate by simply saying it has something wrong. It is taken as a hint to make a will, or a soft professional whisper, "Thou shalt surely die!"

We can imagine how terrible must be the agony of suspense to the victim of real organic heart disease;—how he inwardly feels that some spring or valve about that treacherous heart is spoiled; and that, sooner or later, like a broken timepiece, it must stop;—how the spectre of death hovers with his lance, like the sword of Damocles over his head, or knocks loudly at his heart, at the desk, the pulpit, the bar, or the bedside;—scares the smile from his face at his own festive board;—or folds him in its arms as the demon of nightmare, and begets the horrible dream that the loved ones who so hopefully bade him adieu at night will find him a lifeless corpse in the morning. And all this cruel alarm may be equally caused by the sham imitation of trifling nervous or functional palpitation. The heart is often a perfect medical puzzle. It sympathizes, at times, so closely with its neighbors, the stomach, liver and lungs, as to perplex a careful physician as to which is most at fault. It has special telegraphic wires to the brain, and through the great sympathetic to the intestinal canal, the kidneys and organs of generation, and it shares in every disorder of these. It has mysterious knockings from reflex nervous influences, the wire-pullers of which are at distant points. Like a wind-harp, it trembles with every thrilling emotion, and is untuned alike by the strain of anger, fear, joy, or sorrow. It is over-excited or paralyzed by every malady which changes its own proper stimulant, the blood. And thus, from slight causes, it may torture its owner with the constant fear of physis and death.

The counterfeits, indeed, are as plenty as the real coin. Perhaps no man ever saw more of heart disease than the late Dr. Hope, and we have the deliberate testimony, in his work, that one half of the private cases were merely functional. We may sincerely endorse this statement, and add that these average the most mental suffering.

The public generally cannot distinguish between the mock imitation and the real. They know only of the fatal kind that startles the neighbors, and fills the newspapers with paragraphs of the sudden decease of jolly Falstaffs and blooming matrons, and the verdicts of coroners' juries of "death from disease of the heart." And, in these days, when sophomores and boarding-school misses take so to text-books of physiology, and "Medicine made easy" dwindles to a pocket edition—when the "sovereign people" flock, for mere amusement, to travelling lecturers with grim manikins, and learn just anatomy enough to frighten themselves for a shilling—it is hazardous, at the bedside, to mention the word "heart," or kindly try to explain, or mystify, in "words of learned length and thundering sound." While this kind of knowledge, when thorough, may be exceedingly useful to all sensible people, it is commonly just superficial enough to be imaginary death to the morbid and nervous. In physic, both to "him who gives, and him who takes," infinitesimal learning is positively a "dangerous thing." There is scarcely a gloomy dyspeptic who has not his health-book full of alarming woodcuts of brains, stomachs, lungs and hearts, and who does not wonder how he lives from day to day, with such a delicate gear. Like a certain hypochondriac, who once read a medical book, and fancied he had the symptoms of every disease in rotation, from apoplexy to itch, he has most vivid imaginings, and no organ suffers more than the heart. And this is not strange. Studying a subject will often make us morbid. Medical students, and dyspeptic physicians themselves, are frequent subjects of this heart-delusion, and quite as honestly frighten and victimize others. We have personally known thriving but sedentary mechanics, enterprising merchants, and master-spirits in the learned professions, incapacitated for years, and finally cured, and enabled to laugh at their sincere medical persecutors, by open-air exercise, a vacation, or a foreign tour. Worse than this, we have seen, within the last fifteen years, pale, hysterical females, for the involuntary compliment their unruly hearts have paid the ear of a learned and handsome physician, wrongly and ungallantly sentenced to digitalis and lacerating cups. These are no trifling mistakes. The treatment of *functional* heart disease, as we know, is generally the very opposite of that of organic. The patient needs active exercise perhaps, and we enjoin paralyzing quiet; he should forget his ailments in hopeful assurance, and we terrify; he wants generous beef and mutton, and we tantalize with low diet and vegetables; he requires bracing tonics, and we depress him with sedatives, and fancy we copy Hope and Bouillaud, in taking his impoverished blood.

Not that we undervalue the attainments of our noble profession. Hippocrates himself, in the first of his immortal aphorisms, has magnanimously confessed that "*experience is fallacious and judgment difficult.*" If men's minds and bodies were all cast by the Creator in the same mould—if all were educated alike, and if human wisdom were perfect, then might we expect medical opinions to be uniform and infallible. Our only astonishment is, that the regular members of the great medical church universal, are, in the main, so correct and unanimous in their faith and practice. But, as Andral and Addison* have told us, perfection in the difficult science of physical diagnosis of chest disease is not so easy. The enthusiastic student, fresh from the beautiful theories of books, and with all its hard names ready on his tongue, is doomed to bitter disappointment, if he imagine that, without long and severe training, his uneducated senses can at the bedside accurately weigh and measure a living heart as it flutters in the bosom, or truly estimate its false alarms, its throbbings, and heavings, and its moanings, faint perchance as those of the sea-shell, that

"Remembers its august abodes
And murmurs as the ocean murmured there."

When we remember that, except a few obscure hints in Hippocrates and the older writers, this whole science has risen within the memory of a long-lived generation;—that Laennec himself fell into the blunder of attributing the second sound of the heart to the contraction of the auricles;—that after the sacrifice of so many donkeys and dogs to watch their bare and quivering hearts, the highest authorities are not quite agreed as to the causes of the first sound;—that Skoda, in his masterly work, gives no less than eight different theories, with their authors, to account for the impulse of the heart alone;—surely, it is not strange that disciples should be sometimes mistaken.

Confession, good people tell us, is the first step towards reformation. For ourselves, and our friends, we have tried faithfully to perform this ungracious duty. Mortification indeed, from mistaking our own as well as the cases of valued friends and patients, more than ten years since, first led to the series of observations embodied in this paper. We would fain atone for our early faults by the discovery of more light. Detained by the crowding thoughts long buried, we have lingered thus upon the threshold of the subject, to establish the following propositions:

* "On the Difficulties and Fallacies of Physical Diagnosis."—GUY'S HOSP. REP.

1st. That functional derangements of the heart often simulate fatal organic disease so closely as entirely to deceive, and cause great and needless suffering. *doubtful*

2nd. That, in cases of cardiac disease, it is therefore always best to defer giving an *unfavorable* opinion, till we have made repeated examinations after exercise and quiet, and until after the test of treatment.

3rd. That this subject is of great importance; is still somewhat obscure, and therefore demands further investigation.

To present a better picture, we shall mingle much that is old and familiar to all with the few things of our own that may be new, in a brief review of the whole subject. Our limits will oblige us to condense as much as possible, and to give but a mere abstract of the cases we may quote from others, or record of our own.

Definition. By functional affections of the heart, we mean its numerous derangements from nervous disturbance, alterations in the blood, or sympathy with neighboring organs, which give no *certain signs of organic change*, in its walls, cavities, or valves, while living, or after death.

Symptoms. As before intimated, many of the symptoms of organic heart disease have their close functional imitation. There may be violent palpitation, unnatural impulse, bellows murmur, intermittent pulse, præcordial pain, or fainting, with difficult breathing, or even swelling of the feet, and yet not the slightest organic lesion, or really dangerous disease of the heart exist; nothing but some sympathetic irritation or mere functional disorder, entirely curable. Let us dwell a moment on each of these.

Palpitation may be said to be the sensation of unusual or painful action of the heart. Though occurring also in organic, it is so prominent a feature of functional cardiac disturbance, that the whole subject has been grouped by some under the head of "Nervous Palpitation." In health we are scarcely conscious of the heart's movements.

The hard bounding of congestion of the heart, the smart throbbing of its irritation, or the fluttering and faltering of its debility, are all disagreeable to the patient, and are all grouped under this common term. In irritation of the heart, connected with dyspepsia, as Abercrombie has well described, the heart sometimes rolls and tumbles like an animal in a tight place, frightening the patient with the wildest antics. Alone, it is commonly a symptom of little danger, and attacks many with slight provocation; generally, it occurs in temporary paroxysms; occasionally, the fits are frequent and severe, disturbing sleep,

and leading the nervous patient to gloomy thoughts, like that of Longfellow's, of hearts that—

“Still, like muffled drums, are beating
Funeral marches to the grave.”

Impulse. In health, and in the upright position, as we all know, with every pulsation, the point of the heart strikes against a circular spot, dull on percussion, a couple of inches broad, opposite the cartilage of the fifth left rib, reaching to the sixth, two inches below and one inch to the sternal side of the left nipple, and technically called the *præcordial region*. The extent, force, and manner of this *impulse*, as it is termed, are important points. The impulse in functional congestion, or irritation of the heart, sometimes jars the whole front of the chest, possibly beyond the left nipple, and below the sixth rib, so as to imitate organic enlargement; but then there is the absence of that infallible test, *extended dullness on percussion*. When the heart is loaded and stimulated by rich blood from sedentary, high living, or violent gymnastic exercise, the *impulse* is *strong* and *bounding*; in the palpitation of hysterical women or delicate nervous men, it is *smart* and *knocking*; and in the exhausted and enervated, it becomes *soft* or *hurried tapping*.

Intermittent pulse. The pulse, as Celsus long ago observed, is sometimes a “thing most fallacious.” A matter apparently so important as complete intermission, often means little or nothing. From idiosyncrasy it is habitual in some in perfect health. It is very frequent in cardiac irritation from derangement of the stomach. Dr. Billing speaks of it as common with old persons, whose hearts are “lazy” and require generous treatment. It commonly comes on in paroxysms, and may occur from the third to the tenth or twentieth beat of the pulse, or quite irregularly. Laennec has divided it into true or false, as it reaches the radical pulse, or affects the heart alone. While intermission is frequently found in structural lesions, we must admit the aphorism of Skoda, that “the greatest irregularity in its rythm does not warrant us in assuming the existence of organic disease of the heart!”*

Bellows murmur. The valvular murmur of functional derangement is a soft, blowing or whiffing sound, like a light jet of air from a dry syringe; rarely loud, and *never harsh* like organic murmurs;

* Abhandlung über Perkussion und Auskultation.

confined, as a rule, to the *aortic valves*, and the *first sound*; limited usually to a small space opposite the cartilage of the *second right rib*; occurring in paroxysms with excitement, and ceasing with rest; sometimes with whizzing in the carotids; and almost invariably accompanied by that fitful hum in the jugular veins, like the noise of a top, or distant spinning-wheel, which the French have named the *Bruit de Diable*. The bellows murmur is confined almost entirely to pale anemic subjects, with a *quick pulse*,* suffering from hemorrhage or chlorosis, and having the blood reduced, according to Andral, till it contains much less than the healthy standard of red globules. Laennec believed it sometimes occurred temporarily under excitement in nervous healthy persons. Magendie found that dogs bled largely, acquired a quick, irritable pulse, and a distinct bellows murmur.

Præcordial Pain. Except in the rare cases of angina pectoris which are not organic, and are attended with intense pain, that of ordinary functional affection is rather *uneasiness*, sense of *weight*, or external *soreness*, probably rheumatic or neuralgic; or, in dyspeptic cases it arises from the heart pulsating so near the sensitive stomach; and is then referred to the epigastrium.

Syncope. Fainting has been aptly termed by Bouillaud "momentary paralysis" of the heart.† It varies greatly; sometimes it occurs with merely sudden paleness, dimness of sight, soft thready pulse and sinking, with remaining consciousness, and the patient soon rallies; or he may lie the image of death, pale, cold at the extremities, pulseless at the wrist, apparently breathless, and with only the faintest first sound of the heart for hours or days. The recovery is accompanied by gasping, and sensations generally disagreeable, though in some rare instances they are said to be pleasant. Slight fainting is with nervous persons a very common symptom, and unattended with danger. It is especially characteristic of that form of functional derangement we shall term *debility of the heart*. Prolonged syncope in any cardiac affection is naturally alarming from its close imitation of death, and from the fact that organic disease often terminates in this way, never to rally. Persons also have doubtless been buried alive in this condition.

Dyspnœa. Difficult breathing, though a common symptom of organic difficulties of the heart, occurs in functional disease, principally in those forms of plethoric congestion we shall presently mention, from temporary imperfect arterialization of accumulated blood, or it takes

* Hughes.

† *Maladies du Cœur*.

place in the opposite state of anæmia, in which, from pure debility, slight exertion will sometimes induce fainting and shortness of breath.

Edema. Dropsical swelling of the feet and legs occasionally excites unnecessary apprehensions in pale chlorotic patients laboring under functional palpitation, with soft bellows murmur. But there are never those dropsical effusions of the chest or abdomen so common in organic disease. It is simply a little passive œdema from weakness, which soon disappears under tonic treatment.

Diagnosis. Functional cardiac affections are so apt to be mistaken for organic, that it seems well to enlarge on this point. Age and constitution, according to Dr. Calthrop Williams, throw some light on the subject. As a very general rule, liable to numerous exceptions, functional disturbance is found in sedentary young men, delicate or sanguine, and in chlorotic or hysterical females, from fifteen to twenty-five; while organic commonly occurs later in life, and in the robust as well as the feeble. The heart affections of childhood are almost invariably organic, and from rheumatism.

Functional symptoms are far the most *variable*, disappearing at times entirely, in sleep or quiet, or re-appearing capriciously in paroxysms during bodily rest, from mental excitement or flatulence, while organic impulse and murmurs are more constant, and easily roused by exertion. Walking rapidly a few times round the room, or up stairs, is a very useful test. It will often have no effect on functional symptoms, but it is sure to embarrass the circulation and breathing in organic disease.

Functional affections are commonly much benefited, or cured by treatment; either improve or remain *stationary a long time*,* while organic are too often only palliated by treatment, and tend gradually to grow worse.

In the slight œdema from chlorosis, we have the *general appearance* of the pale, waxen face, blanched lips, dark areola of the eye, and swelling confined to the *feet and legs*; while in the effusion of organic change, the face is bloated, dusky or purplish, the lips bluish, and the dropsy extends to the abdomen or thorax. The unremitting wear of organic disease often produces, as Corvisart has observed, a peculiar anxious contracted expression of countenance.

The *præcordial region* in functional affections is uniformly natural; while in organic enlargement, on close inspection, there can generally be detected more or less *bulging*.

The *purring tremor*, (*fremissement cataire*), a sensation to the hand

* Vallex.

like the purring of a cat, is felt only in organic disease, commonly of the mitral valve. According to Skoda, in mitral disease, too, the *second sound* of the heart is always accented and prolonged.

A wavy, jerking, collapsing *pulse*, unlike any other, is found in free regurgitation, or what the Germans term "*insufficiency*" of the aortic valves.

The sounds of the heart, in functional affections, are unchanged, or a trifle clearer; in organic hypertrophy, the first sound is duller, and in dilatation it is sharper, and like the second sound.*

To contrast them better, we have arranged a few of the more important tests in opposite columns in the following table, suggested in part by the contents of similar ones in the great work of Canstatt,† and the excellent paper by Dr. Hughes, on *Anæmic Murmurs and their Diagnosis* in *Guy's Hospital Reports*.

In Functional Heart Affections :

Præcordial dullness on percussion is not permanently extended, nor the apex displaced.

The *impulse* in *plethora* is strong bounding; in *irritation*, smart knocking; in both, widely jarring; in *debility*, small, soft tapping, sometimes hurried.

The whole movement of the heart is more elastic, light, or easy.

Functional murmurs are soft blowing, aortic and systolic; are from *anæmia*, and usually with the venous hum in the neck.

Functional is more *paroxysmal*.

Active exercise is often well borne, and benefits.

The *causes* are mainly *dyspepsia*, *anæmia*, *plethora*, *nervous* or *generative disease*.

In Organic Heart Disease :

Præcordial dullness in enlargement is permanently extended, and the apex crowded to the left.

The *impulse* in *hypertrophy* is strong, broad heaving; in *dilatation*, weak, wide flapping; in both together, strong, large bulging; in all with extended dullness.

The whole movement of the heart is more dead, clumsy, or labored.

Organic murmurs are harsher, louder, often grating, aortic or mitral, systolic or diastolic, or both, and very rarely with *anæmia* or venous hum.

Organic is more *uniform*.

Active exercise always *aggravates*.

The most common *causes* are, first, *rheumatism*; and next, *Bright's disease*.

* Hope.

† Pathologie und Therapie.

Prognosis. The result, in functional cardiac difficulties, is almost always favorable. We can call to mind some instances of females with exhausting discharges, or prostrated by grief or despair, in whom functional debility of the heart has been finally succeeded by stretching of its walls and incurable dilatation.

Some have thus literally died of a broken heart. On this account, in cases of anæmia, or great weakness, it is desirable to lose no time in strengthening the debilitated organ.

Causes. A large majority of the cases of functional disturbance of the heart are connected directly or remotely with affections of the digestive or generative organs. Having to notice the principal causes individually in our future classification and description, we here give, with perhaps a little repetition and latitude, the following simple enumeration.

Sanguineous:—Plethora, revulsion from cold, pregnancy, pulmonary congestion, hemorrhoids; irritation or exhaustion from hemorrhage, chlorosis, excessive lactation, &c.

Muscular:—Rowing, gymnastics, running, dancing, or violent singing.

Nervous:—Neuralgia, spinal irritation, hysteria.

Mental:—Exciting, anger, or joy; depressing, fear, sorrow, despair; exhausting, excessive study.

Digestive:—Disordered stomach or liver, tape-worm, gout, diarrhœa.

Generative:—Uterine disease, menorrhagia, amenorrhœa, dysmenorrhœa, leucorrhœa, excessive indulgence, masturbation, frequent nocturnal emissions, or spermatorrhœa.

Poisonous or irritative:—Tobacco, coffee, green tea, lead, marsh-miasma.

Pathology. One of three morbid conditions seems usually to predominate in functional cardiac derangement:

Congestion, Irritation or Debility. Irritation in other parts of the system often precedes congestion, as it does inflammation; but the heart is an hydraulic machine, and its congestions, especially of this kind, commonly depend upon causes independent of the organ; are at first sudden and mostly mechanical. Let the heart be overloaded for a time with rich, stimulating blood, and congestion may give rise to irritation; and when, at last, its nervous energy is exhausted, this again may terminate in the third stage, or *debility*. Or, again, two of these may be blended. For practical purposes, we think it will simplify our views to have a constant reference to one of these conditions, and

we have therefore made them the basis of what we trust is a simple and natural arrangement of the whole subject.

Classification. In introducing new terms, and what may be deemed innovations, we may be indulged perhaps in a word of explanation. Our object has been to *display best* what seemed *most important*. To do this, much depends on the arrangement. We learn far more of the family relations and practical uses of plants, for instance, from what is termed the "natural system," than the more showy one of Linnæus. So in the treatment of disease, the "natural order" is often first to regard effects; and, secondly, their causes. Suppose, for example, twenty persons fall sick from exposure to intense cold, and five get rheumatism, and five peritonitis, and five pleurisy, and the last five are frost-bitten, would any sane man treat all alike, because all arose from the same cause? We would treat its pathological *effects*. So, in different constitutions, mental excitement, as we shall see, may cause either cardiac *congestion, irritation, or debility*; or other agents may produce these same conditions; and all we propose to do, is to make these last *primary*, and their causes *secondary*.

Some may object, again, to our including affections mainly located in other organs; and, though their most troublesome manifestations are through the heart, may regard these as mere *symptoms*. Such would banish "*dropsy*" from every text-book, for this is commonly a mere "*symptom*" of disease of the kidney, heart, or peritoneum. We prefer to look at diseases and symptoms in every possible combination and light. Classification is only a convenient framework to display the picture, to be shifted or amended as occasion may require.

CLASSIFICATION.

<p>I.</p> <p>Congestion of the heart.</p> <p>{ Plethoric, Over-active, Revulsive, Emotional.</p>	<p>III.</p>
<p>II.</p> <p>Irritation of the heart.</p> <p>{ Nervous, Hysterical, Mental, Anæmic, Dyspeptic, Uterine, Spermatorrhœal.</p>	<p>Debility of the heart.</p> <p>{ Nervous, Hysterical, Emotional, Anæmic, Dyspeptic, Uterine, Spermatorrhœal.</p>

I. CONGESTION OF THE HEART. This is characterized by a strong, *bounding impulse*, unnaturally jarring the chest, without the extended *dullness* of organic enlargement, and frequently without corresponding force in the *pulse* at the wrist, with *præcordial oppression* or pain, and irregular *palpitation*.

Cardiac Congestion from Plethora. This form usually occurs in adults of full sedentary habits, or sanguine growing youths. Dr. Latham has given a graphic description of it under the name of "Mock Hypertrophy." "I am well aware," says Dr. L., "that there is a mock hypertrophy of the heart, bearing so close a resemblance to the true, that I should find no fault with you for being taken in by the counterfeit. There may be violent impulse of the heart felt not only in the præcordial region, but in every part of the chest upon which you lay your hand. Here may be pain in the heart, and pain and throbbing in the head; and all these may be never absent, and often aggravated, from time to time, by accidental circumstances; and they may continue, from first to last, for several months, or for several years, and produce in the meanwhile an incapacity for all useful exertion, both mental and bodily. All these may be, and yet there be no hypertrophy.

"When the impulse of the heart is excessive, and, at the same time, the sounds are obtuse, muffled, and indistinct, and the præcordial region presents a larger space than natural, which is dull to percussion, then the signs of hypertrophy are complete. But when the impulse of the heart is in excess, and, at the same time, its sounds are as loud and clear as ever, or louder and clearer still, and the whole præcordial region is quite resonant to percussion, save the small space naturally dull, then the signs of hypertrophy are incomplete."

Contrary to some others, Dr. L. believes the cure of real organic hypertrophy hopeless; while he has "treated successfully" the mock imitation described, "in a hundred instances."

This form is occasionally found among clerks and merchants of full habits, or sanguine youths from the country, who surfeit themselves with rich food, and take little exercise; thus overloading the stomach and stimulating the heart with rich blood, they sometimes complain of flatulence, indigestion, and pain in the head, as well as alarming palpitation.

Cardiac Congestion—Plethora—Recovery. A clerk, strong, athletic, married, and sedentary, consulted me a few months since for uneasiness, irregular palpitation, and strong, bounding, jarring impulse of a heart otherwise natural, attended with occasional indigestion and

constipation, and constant fullness and pain in the head, *with a bright congested eye*. He was ordered a free purgative of compound extract colocynth with blue mass, to eat meat but sparingly but once a day, to rise early, and use cold sponging with hard frictions, and, avoiding the heat, to walk several miles daily. These measures having only afforded temporary relief, on a return of symptoms nearly apoplectic, they were further aided by a full bleeding from the arm, and a powerful hydragogue cathartic; and by the most careful attention to spare diet and free exercise, in a few weeks he quite recovered.

Congestion of the heart from over-exertion. As we know, from their interlacing with the bloodvessels, the muscles in strong exertion must greatly increase the force of the circulation. Some ingenious explanations of this are given by Dr. Wardrop, the best writer we have seen on the subject of cardiac congestion, under the head of what he terms the *musculo-cardiac function*. Simply running a few yards, or any strong effort, in health, will, as we know, bring on palpitation. And in the affection in question, from the frequency or violence of the exertion, this overaction of the heart becomes habitual. The symptoms are much the same as in plethora. Sanguine growing youths, fond of gymnastics, and especially rowing, are the most frequent subjects.

Dr. Addison, in his lectures at Guy's, is in the habit of cautioning the students against the rowing matches on the Thames. A fine lad of seventeen, excessively fond of rowing, was brought to me while stopping with a friend on the shores of a lake, with suspected organic disease, having a violent, knocking impulse. He was duly freed from the imputation, and directed to be less ambitious in boating and climbing the neighboring mountains. Indeed, youths generally outgrow this development, if left alone. Occasionally, it ceases suddenly. Dr. Latham mentions a young officer whose heart ceased to be unruly at the battle of Navarino. Almost any kind of severe exercise may be the first exciting cause. A servant-maid, from carrying coals up stairs, a chorus singer in St. Paul's, and a French danseuse, were severally more or less disabled for a length of time by severe palpitation, from violent efforts in their different vocations.

CASE.—A jeweller, aged twenty, short, stout, ruddy, and temperate, having practiced gymnastics, and particularly climbing, and suspending himself by the arms, consulted me a few months since for strong, jarring impulse, distressing fits of palpitation, and constant headache. He was ordered a free alterative purgative, to be followed by twenty drops of equal parts of the tincture of digitalis and hyoseyamus in water, three times a day, with the local application of croton oil, followed by bella-

donna; to eat sparingly of meat at dinner alone, to avoid violent exercise, and to walk much, moderately. He soon recovered.

A corpulent, healthy engraver, having run violently to overtake a coach, brought on severe palpitation of the heart, exhaustion, and difficult breathing, which remained for several days, and "were not relieved, until after blood-letting, leeches, and antimonials had been employed."*

Congestion of the heart from revulsion.—Any local agency which disturbs the equilibrium, and causes special determination of blood, may be termed *revulsive*. A moment's reflection on the number and size of the superficial veins, and the quantity of the blood they naturally contain, will show us the importance of the circulation on the surface of the body. Thus we aid this and relieve internal organs by sinapisms, pediluvia and diaphoretics.

Cold, by an opposite action, drives the blood from the surface, and overloads the internal organs. In a large hospital of this city, it is stated they can tell a very cold day in winter by the extra number of cases of apoplexy. On the principle of relieving this internal congestion, Dr. MacIntosh bled during the chill of ague. So, too, we forbid sudden cold baths to patients liable to apoplexy or disease of the heart. They have sometimes produced immediate death, or troublesome palpitation.

A gouty gentleman, after sea-bathing, had pain, palpitation, and *violent impulse of the heart, with small pulse*, for months, which were at last completely relieved by antimonials.

Cold substances taken into the stomach may derange the circulation. A case is quoted of a strong, healthy young man, heated with mowing, who drank freely of cold water, and was suddenly prostrated, with difficult breathing, loss of vision, and cold extremities, while, for the next three days, notwithstanding the attempt to relieve congestion by small bleedings, warm baths, and saline purgatives, there were *over-action, and intermission of the heart, with an oppressed pulse*, ranging from 14 to 50 beats per minute.—He slowly improved for the next four days, and at the end of the week the natural circulation was restored.†

Hot food, rapidly swallowed, has produced like effects. A young man, after eating a very hot potatoe, became insensible, finally rallied,

* Wardrop.

† Am. Med. Repository.

and for nine years after suffered from pain, palpitation and *forcible impulse of the heart, with a weak pulse*, frequent epistaxis, and cold extremities. He was at length greatly relieved by several moderate leechings over the heart, with small doses of the tartrate of antimony, followed by preparations of iron.*

Revulsion may be occasioned by *mechanical pressure*. Thus, the French conscripts are said to produce a very good imitation of disease of the heart, by tying a ligature tightly round the neck or arms. Mr. Hyslop found, that by grasping firmly the two arms, he greatly assisted the recovery of a lady from fainting; and, on making the experiment of ligatures upon his own arms, he could increase the pulsations of the heart ten beats in a minute.

Pregnancy, by pressure on the abdominal vessels, as well as by plethora, sometimes occasions distressing palpitation. A young married lady, in the fifth month of her first pregnancy, was attacked with a violent beating of the heart, and an aortic thrill, supposed to be aneurismal. After great suffering and dropsical symptoms, unrelieved by bleeding, digitalis and other remedies, she recovered completely after natural labor.†

Suppression of habitual discharges, such as hemorrhoids or the menstrual flow, will sometimes by revulsion produce palpitation and congestion of the heart. A stout, ruddy country girl, with suppressed menses, who had "tumultuous palpitation," with the impulse so strong as to "raise the head," was restored to health by general bleeding, followed by purgatives, low diet, and cupping over the loins.‡

Pulmonary congestion may react upon the heart. The lungs, as we know, act partly like an immense sponge, filling the thorax, both in receiving and returning the blood. *Inspiration*, by expansion, draws in *venous blood*, while *expiration* by pressure expels *arterial*. Thus the mechanical effect of artificial respiration is to unload the heart of the stillborn infant; and, in this way, Sir B. Brodie roused the congested hearts of animals paralyzed by poison. John Hunter, it is said, once saved his own life, in nearly fatal syncope, from organic disease, by continual violent expiratory efforts. Some interesting facts on this subject may be found in the excellent works of Dr. Wardrop and Dr. Calthrop Williams. Congestion of the lungs has a tendency to overload the heart, and so palpitation and violent impulse are often accompanied by cough and difficult breathing.

* Wardrop.

† Dr. Robert Lee.

‡ Dr. Calthrop Williams.

A lady, aged 28, kept awake, and sitting up in bed several nights, with a severe cough, could hear as well as feel the violent palpitation and impulse of the heart, especially on the slightest exertion. By small leechings to the chest, repeated every four days, and a dose of James' powder every night, all the symptoms were subdued.*

Emotional congestion of the heart. Every one has felt his own heart beat violently from mental emotion. Corvisart believed that affections of the heart in his time greatly increased during the reign of terror, and the exciting periods of the French Revolution. The term "broken-hearted," is unfortunately not merely figurative. From the paleness of the face, in terror or despair, we know that the blood has retreated *somewhere*. Shakspeare, the great naturalist of poets, tells us *where* :

"Oft have I seen a timely parted ghost •
Of ashy semblance, meagre, pale, and bloodless,—
Being all descended to the laboring heart."

There is, however, more than mere revulsion. The heart receives besides a nervous *stimulus or shock*. This kind of congestion forms, then, a separate item, and an appropriate link to the next group of functional heart affections, or those depending on *irritation*.

A mother, still broken-hearted at the sudden loss of her child, a year previous, complained of difficult breathing, and a *violent impulse of the heart with a small pulse*. By means of alternate leechings to the chest and feet, with antimonials and sedatives, she at length completely recovered.*

II. IRRITATION OF THE HEART. Cardiac irritation is characterized by a smart knocking *impulse*, less *forcible* and *jarring* than that of congestion, but above that of health; more *variable* with excitement, and corresponding more uniformly with the radial *pulse*.

It arises principally from nervous derangement, impoverished blood, or morbid sympathy, with disorders of the digestive or generative systems.

Nervous Irritation of the Heart.—Some persons, from birth, have a nervous system unduly developed, and, in infancy are specially liable to convulsions; in childhood, to chorea; and in adult life, to hysteria or nervous palpitation of the heart. Some interesting observations on

* Dr. Wardrop.

this subject will be found in a paper by M. Gintrac, on *Surexcitation Nerveuse*.*

The Irritable Heart.—Sometimes this exaltation of nervous sensibility is confined to a single organ, in the form of those curious obstinate affections described by Sir A. Cooper, Dr. Gooch, and others, under the name, "Irritable Breast," "Uterus, Testis," &c.

In the following example no neighboring sources of irritation could be detected. The morbid nervous excitability was exceedingly intractable, and confined to the heart alone, producing painful palpitation and a smart *ropping impulse*, and we venture from analogy to apply the above term.

Irritable Heart.—Incurable.—A female hat-presser, aged 35, unmarried, tall, muscular, otherwise apparently healthy, though suffering from occasional want and poverty, in a damp basement,—consulted me in 1848 for "nervous palpitation" of ten years' duration, and for which she bore the marks of counter-irritation, while under ineffectual treatment some years previous in Edinburgh. The heart was natural in size and sounds, with a little præcordial tenderness to the finger, *painful palpitation*, more or less constant, increased by excitement, and accompanied by a *smart knocking impulse*. Under the use of preparations of iron, Fowler's solution, in combination, or otherwise, with vegetable tonics, digitalis, hyoseyamus, conium, valerian, with mild counter-irritation, followed by the external application of belladonna, she continued for two years with slight palliation at times, but no permanent improvement, till at last she grew discouraged and discontinued treatment. A year or so after, she died somewhat suddenly of pneumonia, without affording the desirable opportunity of a post-mortem.

Spinal Irritation.—We sincerely endorse the opinion of Professor Romberg, of Berlin, in his great work on nervous diseases, that this matter has been vastly over-estimated. Most nervous or hysterical patients, and especially those subject to palpitation, have a little sensitiveness, on pressing over the spine of some of the dorsal vertebræ between the shoulders, which some have thus magnified with an alarming name. It is ordinarily, we think, simply a slight test of an irritable nervous system. When much affected by atmospheric changes, as Dr. Wood, of Philadelphia, has observed, it may sometimes be rheumatic. For a more serious view of the matter, we refer to the works of Teale and others. In some instances, where perhaps, from scrofu-

* Mem. de l'Academie Royale.

lous irritation or some injury, the spinal tenderness has been more deep-seated and constant, palpitation and other unpleasant symptoms have certainly been relieved by leeching, cupping, or irritation near the spine. Dr. Swett, in his excellent work, mentions a case of functional disturbance of the heart, cured by an issue near a tender vertebra, followed by tonics.

Irritating Nervines or *Narcotics* in common use, as articles of luxury, have the effect, in certain habits, of deranging the action of the heart; such are green tea and strong coffee. A case is mentioned of a gentleman, who could, at any time, by taking a cup of coffee, produce palpitation and bleeding from the nose. By far the most noxious luxury to the dyspeptic, or nervous, is tobacco. The essential oil is said to poison by paralyzing the heart. A Mexican minister, some years since, summoned Dr. Alexander H. Stevens, of this city, to Washington, for supposed organic disease of the heart. A cure was performed by emptying his excellency's snuff box. We shall illustrate further in a moment.

Neuralgia of the Heart.—Such has been the term given by some to the very rare cases of angina pectoris, which the researches of modern pathology do not show to be connected with ossification or other form of organic change.*

Irritation of the Heart, Angina Pectoris, from the use of Tobacco.—A highly intelligent friend, aged sixty-five, stout, ruddy, early married, temperate, managing actively his large business, after promising that he commenced chewing tobacco at seventeen, swallowing the juice, as is sometimes customary, "to prevent injuring his lungs from constant spitting,"—and that years after he suffered from a gnawing, capricious appetite, nausea, vomiting of meals, emaciation, nervousness, and *palpitation of the heart*, dictated to me quietly at his desk, recently, the following story:

"Seven years thus miserably passed, when, one day after dinner, I was suddenly seized with intense pain in the chest, gasping for breath, and a sensation as if *a crowbar were pressed tightly from the right breast to the left, till it came and twisted in a knot round the heart, which now stopped deathly still for a minute, and then leaped like a dozen frogs*. After two hours of death-like suffering, the attack ceased, and I found that ever after my heart *missed every fourth beat*. My physician said that I had organic disease of the heart—must die suddenly—and need only take a little brandy for the painful paroxysms,

* See Dr. Walshe.

and I soon found it the only thing that gave them any relief. For the next twenty-seven years I continued to suffer milder attacks like the above, lasting from one to several minutes, sometimes as often as two or three times a day or night; and to be sickly-looking, thin, and pale as a ghost. Simply from revolting at the idea of being a slave to *one vile habit alone*, and without dreaming of the suffering it had cost me, after *thirty-three years' use*, I one day threw away tobacco forever. Words cannot describe my suffering and desire for a time. I was reminded of the Indian, who, next to all the rum in the world, wanted all the tobacco. But my firm will conquered. In a month my paroxysms nearly ceased, and soon after left entirely. I was directly a new man, and grew stout and hale, as you see. With the exception of a little asthmatic breathing, in close rooms and the like, for nearly twenty years since I have enjoyed excellent health."

On making, by his kind permission, a cursory examination, I found the heart seemingly healthy in size and structure, only *irregular*, intermitting still at every fourth pulsation.

Hysterical Irritation of the Heart.—It is well known that hysteria often imitates, successfully, dangerous inflammations and other ills, and among the rest, disease of the heart.

Hysterical Palpitation—Leucorrhœa—Recovery.—A widow lady, aged twenty-five, sanguine, nervous, sedentary, and very literary, after a series of hysterical paroxysms from sudden shock, requested my attention in 1850 to "disease of the heart," under which, she stated, medical and other friends thought her laboring for months previous. The least excitement would give rise to distressing palpitation, accompanied by a *smart knocking impulse*. There was some *leucorrhœa*, with pain in the loins.

Under the use of various preparations of iron, with bitter tonics and sedatives; belladonna to the præcordial region; a mixture of the tinctures of valerian and hyoseyâmus for the fits of palpitation; with morning vaginal injections, of eight grains each, of extract of conium and tannic acid, in a tumbler of water, followed by evening injections with cold water, and regular long walks in the cool part of the day, in a few weeks she was quite restored to health.

Mental Irritation of the Heart.—This is exemplified in the tendency of all nations, figuratively or otherwise, to speak of the heart as the seat of the passions. Laughing, joy or anger accelerates, while grief or fear retards the circulation. The long, deep inspirations of yawning, sighing, and sobbing are instinctive, and mechanically relieve a congested or "heavy" heart. Doubtless from the mental shock af-

fecting the heart, the winner of a rich prize in a lottery, a feeble Emperor of Morocco in gaining a desperate victory, and a fond Russian mother in the restoration of her captive son, all died of the joyful news. John Hunter expired of disease of the heart in a fit of anger. The wife of a farmer, long harrassed with the fear of incendiaries; a nurse, from continued anxious watching; and a lady, tortured for a week with danger of shipwreck; each suffered afterwards from protracted disorder of the heart! A patient of the writer, disconsolate at the loss of her broken-hearted daughter, whose case will be mentioned, died of dilatation of the heart a few months afterwards.

Exhausting Mental Application is the frequent cause of irritation and palpitation of the heart. A friend, distinguished as a divine and author, aged about 42, moderately full, after several years' severe application, in which he habitually studied till three or four o'clock in the morning, was at last greatly incapacitated for a long period by irritable palpitation of the heart. He was most relieved by a succession of blisters, the size of a twenty-five cent piece, over the heart, and rest, with tonics, and at length nearly restored by a tour in Europe, mental relaxation and more generous diet. Any great mental effort, however, still exhausts his stock of nervous energy, and brings on irritability of the heart.

A celebrated Methodist clergyman, of middle age,—as a Western medical friend recently informed me, having,—by protracted and severe studies, brought on irregularity of the heart, was sentenced to suspension, and patient waiting for sudden death from organic disease, by the most celebrated medical professors of a Western school. In his retirement, he was surprised by the opinion of a shrewd country physician, that it was merely functional, and that he might with proper treatment gradually resume active labor; and finding, by a little experience, the last opinion correct, in a few months after he accepted the highest office in his church. He has since labored several years as Bishop.

It would seem as if the study of certain diseases sometimes favored their real or imaginary development. Laennec died of pthisis, and Corvisart of disease of the heart. When the celebrated Professor Frank was preparing his lectures on disease of the heart at Pavia, his own heart became so disturbed that he was obliged to rest for a time.* Rumor says that no less than five of the Professors in one of the medical colleges of this city have unjustly suspected their hearts.

* Romberg.

Medical students exhausted by a winter session are apt to be special subjects of real or fancied irregularity of the heart. We have frequently to assure our young studious friends that their hearts are certainly in the right place, and gravely prescribe a vacation. Bouillaud slyly alludes to this as a distinct species, under the name of "*Maladie du Cœur des Etudiants*."

We remember an early friend who, with the writer and two or three other students, gravely flourished the stethoscope over each other as a sort of society of mutual observation. We fancy we see still the doleful expression of his pale, handsome face, at the spring of the gushing cups over his intermitting rebellious heart. He soon after grew stout and forgot his heart in a successful country practice. A young friend, attending our Lectures on Diseases of the Chest last winter, felt an unusual knocking of his heart after ascending the long college stairs, and required several examinations to satisfy him. An early fellow-student (who happened to come to light again after illness and a hard session), in mounting to one of the "sky apartments" of a Parisian hotel, used frequently in alarm to call the writer to examine his palpitating irritable heart, and recovered under the somewhat selfish prescription of a partially pedestrian tour with his adviser to the south.

Anemic Irritation of the Heart. The reaction from sudden hemorrhage or excessive venesection, so well described by Marshall Hall, is sometimes characterized by *palpitation, distress, a smart knocking impulse of the heart* and bellows murmur, with a quick jerking and occasionally intermittent pulse, thrill of the arteries, nervous panting and sense of wildness and pain in the head.

In the case of a middle-aged sanguine, nervous lady, under our care in 1849, who had been very largely bled in severe puerperal peritonitis, this mingling of heart and head symptoms suddenly assumed a very perplexing character; and with serious misgivings, as to whether the lancet was not farther required, she was fortunately partially narcotized with opiates, and the palpitation and distress at the heart soon ceased.

A boarding mistress is mentioned by Morgani, who, for "palpitation of the heart," was bled, with temporary relief, followed by great aggravation. The "breast seemed at every stroke to be lifted up," and the venesections were repeated, till by degrees she was, as the event proved, literally bled to death; for, on the post-mortem examination, not the slightest change in the heart or viscera could be detected. "Everything was entire, sound and natural."

In Chlorosis, especially in the more excitable of its delicate sub-

jects, or in the earlier stages, with the blanched skin and dark areola of the eye, we have sometimes the irregular action, smart knocking impulse and bellows murmur of an irritable heart. Palpitation, indeed, was enumerated as one of the symptoms of "the green sickness" by Sydenham.

Moderate Chlorosis—Palpitation—Tedious Recovery.—A lady, aged 25; moderately full, but pale as a statue, with blanched lips, dark areola of the eye, very sedentary, in deep domestic affliction, with scanty menstruation, consulted me in 1849, in much alarm, for distressing palpitation, and a smart knocking impulse of the heart, diminished by rest, and increased by excitement, with an intermittent neuralgic pain along the right of the sternum, and *without bellows murmur*. After the persevering use of various preparations of iron, with vegetable bitters, mild sedatives, and the local application of belladonna, with regular walking and generous diet for several months, she slowly recovered her health.

Dyspeptic Irritation of the Heart.—This exceedingly common form doubtless depends on what is termed *sympathy*, and this latter again is certainly somewhat mysterious. Something is explained by Marshall Hall's theory of reflex, nervous communication, as well as by considering the connection of the great sympathetic system of nerves. The facts are quite evident. An inflamed kidney, a pregnant uterus, or a concussed brain, will produce a sick stomach, and none of these can suffer but the heart and its pulse respond.

Dyspeptic Irritation of the Heart—Recovery.—A gardener, aged 50, muscular, unemployed, and melancholy, was admitted under our care at the New-York Dispensary, in August last, with loss of appetite, flatulence, bitter taste, tongue clean and red at the tip, tenderness of the epigastrium, constipation, high-colored urine, pulse 65 and soft, with *palpitation* and a *smart knocking impulse* of a heart otherwise natural. He was ordered a mild alterative purgative, to be followed by five drops of the tincture of nux vomica, in water, three times a day; to avoid indigestible food, coffee and tobacco; to sponge with cold water in the morning, and follow with friction; to walk five miles daily; and in less than a month he was discharged cured.

Congestion or Torpor of the Liver is frequently intimately associated with dyspeptic irritation of the heart. Dr. Hope gives a very interesting case of a lady aged forty, stout, with intermission, palpitation and oppression of a heart otherwise natural, and with constipation, succeeded by bilious stools and *enlarged liver*. Spare diet, and "active mercurial purgatives, employed almost without intermission

for two months, brought off an incredible quantity of dark green and deep orange bile." Suspension of these aggravated the symptoms. In three months she enjoyed "perfect health."

Hepatic Torpor—Indigestion—Severe Palpitation—Improvement.
—A merchant, aged 55, spare, having suffered from dyspepsia, and the fear of organic heart disease for many years, consulted me in 1850, for superficial pain, palpitation and a smart knocking impulse of the heart, otherwise normal, with loss of appetite, flatulence, despondency, constipation, clayey stools, bilious urine, shooting shoulder pains, jaundiced dry skin, with occasional turns of night mare, and terrible headache. With an occasional mild mercurial purgative,—five grains each of the iodide of potassium, with the extract of taraxacum, in solution, three times a day,—followed by iron, with mild sedatives; small doses of the tincture of nux vomica; the use of equal parts of soap liniment and tincture of belladonna over the heart; careful diet, brown bread, and especially *recreation in the country, and gardening*,—in a few months he materially improved.

Tape-worm has sometimes produced dyspepsia with serious disturbance of the heart. Dr. Calthrop Williams mentions the case of a lady, aged twenty-two, with voracious appetite, fixed *pain in the left hypochondrium*, restless nights, febrile attacks, syncope, alarming cerebral symptoms, with *violent palpitation*, especially before eating—who, by turpentine and other purgatives (producing the voidance of a tape-worm), and a subsequent tonic course, was perfectly cured.

Gout is, among our active population, comparatively a rare disease, and among the very few cases we have known, we have not happened to meet any decided instances of functional disturbance of the heart. In older and more luxurious states of society, the case is different. Three of the examples of dyspeptic palpitation mentioned by Abercrombie were evidently gouty. One gentleman, aged forty-eight, after suffering greatly from indigestion, and daily paroxysms of distressing palpitation, was at last cured as by a charm, by so small a quantity as twenty drops of the wine of colchicum, in divided doses, daily for a month.

Uterine Irritation of the Heart.—Such a phrase may possibly seem at first inconsistent, and excite a smile; but if that smile make the morbid sympathy between the uterus and the heart remembered, our purpose in coining the term is accomplished. Dr. Williams uses the short, expressive phrase "uterine palpitation." Every variety of menstrual irregularity, as well as structural disease of the uterus itself,

may occasion functional disorder of the heart. Want of space must limit our examples.

Uterine Disease—Palpitation—Recovery.—A lady, aged 26, having four months previously suffered much in an instrumental first labor, called my attention, in 1850, to palpitation, uneasiness, and a smart, knocking impulse of a heart otherwise healthy, accompanied by dragging pains about the loins. On examination with the speculum, the vagina was slightly smeared with leucorrhœal discharge, and the os uteri was prolapsed, swollen, tender, and excoriated. Under the use of occasional applications, with a camel's-hair brush, of a solution of the nitrate of silver of 90 grains to the ounce; vaginal injections of a solution of extract of conium and tannin, alternated with cold water; twenty drops of a mixture of equal parts of the muriated tincture of iron and the tincture of hyoseyamus three times a day in a wineglass of sweetened water, porter and beefsteak, she gradually recovered her health.

Dysmenorrhœa—Nervous Palpitation—Recovery.—A lady, aged 24, slender, stooped, strumous, having the remains of former spinal irritation, and having just weaned her firstborn, consulted me in 1843 for smart nervous palpitation and difficult, painful menstruation, declared to be "like labor." By full doses of Dover's powder and camphor in pills for the monthly paroxysms, followed in the intervals by the daily administration of the tincture of guaiac, after the plan of Dr. Dewees; and subsequently, the still more successful use of a solution of the iodide of iron, in combination with the tincture of hyoseyamus; she regained her usual rather feeble health, and soon after became pregnant.

Irritation of the Heart from Spermatorrhœa in the male is sometimes present. We remember two cases of this kind. One was a young man, kindly referred by a medical friend to one of our Chest Cliniques, in which there was a smart, knocking impulse of the heart; but he unfortunately escaped us both, and did not return. Most commonly, however, it produces *cardiac debility*.

III. DEBILITY OF THE HEART.—This is characterized by a *soft, tapping impulse, sometimes hurried*; and a *tendency to fainting*. It is produced by any agency which, by general depression of the nervous system, changes in the blood, by depraved nutrition, weakening discharges, or the morbid sympathy with other organs, exhausts the nervous energy of the heart. We were strongly inclined at first, therefore, to adopt the term *enervation of the heart*, instead of the more familiar one we have chosen.

Cardiac Debility from Nervous Disorder.—Romberg has classed nervous diseases with a loss of power under the general term Anæsthesia. On this principle, certain poisons, as marsh miasma, lead, and tobacco, may be termed slow anæsthetics.

Excitation of the Heart from Marsh Miasma—Anxiety—Improvement.—A bricklayer, aged 28, tall, slender, bilious-looking, having previously suffered from ague in a miasmatic district, consulted us in 1844 for *palpitation, with feeble tapping impulse* of the heart, else normal, accompanied by a *tendency to faint*, even with the slight exertion of raising a brick; with rather feeble pulse and moderate appetite; spleen and liver natural in size; some spinal sensitiveness between the shoulders; and much *mental suffering*, from constant harassing of committees from an incredulous beneficiary society. He was ordered preparations of iron, with quinine, aloes, and bitters; mild counter-irritation and belladonna; cold sponging and friction; with diligent walking and total abstinence from cigars; and in a few weeks materially improved, but, against my friendly protest, was soon cut off by his society, and sent to his friends in the country.

Debility of the Heart from Lead-poisoning—Recovery.—A laborer, aged 34, muscular, having worked in a white-lead manufactory a few weeks, was admitted under our care in the New-York Dispensary, early in October last, for palpitation, difficult breathing, uneasiness and *faintness* on exertion, with *soft tapping impulse of the heart*, otherwise normal, with the *violet lead streak* of the gums, trembling weakness and numbness of the limbs, pulse 74, *weak*; loss of appetite, nausea, tenderness of the epigastrium, and constipation. He never had rheumatism; used no tobacco; indulged in no excess. Partially on the plan of M. Melsens in lead disease, he was ordered ten grains of the iodide of potassium in solution, with a few drops of the tincture of nux vomica three times a day; and subsequently these were aided by a blister, the size of a cent over the heart, dressed with belladonna ointment, with the effect of gradually relieving all the symptoms, and he left convalescent at the end of a month.

Weak Heart from Tobacco.—A cork-cutter aged 21 was recently admitted under our care in the N. Y. Dispensary, with faintness on exertion, palpitation and soft tapping impulse of the heart, from the excessive use of tobacco, who was cured by abstinence, walking, and the use of small doses of tincture of nux vomica, and latterly of the *acetated solution of strychnia*.

Hysterical Debility of the Heart.—Those instances of nervous females in which there is catalepsy, or fainting for hours, with a scarcely

perceptible action of the heart, are really cases of simply hysterical debility of the heart.

We suspect too that the favorite subjects for so-named "mesmeric experiments" have a weakness in that quarter.

Emotional Debility of the Heart.—It is scarcely necessary to add to our remarks upon the influence of depressing passions. The following cases explain themselves :

Weakness of the Heart—Domestic Grief—Much Improvement.—A poor woman, aged 32, slender, mother of two children, fretting from want, and the long absence of her husband, was admitted under my care in January last, at the New-York Dispensary, for "fainting turns," *palpitation, feeble, velvety impulse* of the heart, else regular, with slight dyspeptic symptoms. Under the use of mild counter-irritation over the heart, with a mixture of croton oil and sulphuric ether; and twenty drops, three times a day in a wineglass of sweetened water, of a mixture of one ounce each of the tincture of hyoseyanus with the muriated tincture of iron to a drachm of the tincture of nuxvomica; with moderate walking, in a few weeks she greatly improved.

Cardiac Debility—Grief—Amenorrhœa—Phthisis.—A young lady, aged 19, English, fair, delicate, frequently sighing, having been forcibly separated from her lover by parental authority, on emigrating, consulted me in 1845 for *faintness on slight exertion, palpitation and fluttering, velvety impulse of the heart*, otherwise natural, accompanied by suppression of menstruation. Silent and sad,

"She never told her love,
But let concealment, like a worm i' the bud,
Feed on her damask cheek."

Suspecting something from her manner, I learned her story from a sister, with the addition, that her friends were often obliged to watch her as she wandered on the beach, broken-hearted, to gaze on the sea. Chalybeates and the usual restoratives were tried in vain. A few months after, with a suspicious cough, came the signs of tubercular softening; and, in the wreck of beauty we sometimes see, with the alabaster forehead, the pearly eye, and hectic flush of the cheek, she gently wasted away with consumption.

Anæmic Debility of the Heart.—After reaction from loss of blood by hemorrhage, or depraved nutrition, there naturally follows exhaustion.

Weak Heart—Chlorosis—Bellows Murmur.—Bruit de Diable. Recovery.—A lady, aged 25, married, slight, pale, sedentary, consulted

me in July, 1852, for palpitation, uneasiness, *faintness on exertion*, *soft, variable, aortic bellows murmur*, with the first sound, and weak tapping impulse of a heart, else natural; with venous hum in the jugulars, and irregular scanty menstruation. After the use of preparations of iron, with mild sedatives, exercise, and generous diet for a few weeks, she was sent a month into the country, and returned quite well.

Dyspeptic Debility of the Heart.—A majority of the purely dyspeptic examples of cardiac functional disturbance come under the head of "*irritation.*" It is only in the *worn-out* cases that we have debility of the heart.

Debility of the Heart—Frequent Fainting—Dyspepsia—Improvement.—A merchant, aged 32, medium, pale, sedentary, married, eight years dyspeptic, consulted me in 1851 for palpitation, occasional turns of irregular intermission of the heart, with soft tapping impulse, *sometimes hurried*, and *frequent fainting*, accompanied by capricious appetite, "belching," flatulence, uneasiness, and sensation of splashing of liquids in the stomach—for which he had received great variety of treatment on both sides of the Atlantic. An oyster supper, a social evening, any special indulgence, or an exciting day's work expended the nervous energy of his heart, and aggravated all his symptoms. The faintness, or "pitching turns" as he termed them, greatly alarmed him, and were generally mere momentary loss of power, and staggering along the street or about his business. Occasionally they laid him powerless and pale on the sofa for five or ten minutes. Sometimes they were absent for days, and then repeated for several times a day. The intermission generally at every fifth beat was sometimes absent, and was *abolished at any time* by walking a few times rapidly round the room. He was ordered Hoffman's anodyne, or, in extremity, brandy and water for his fainting turns; and in the intervals, in varied succession, preparations of iron with hyoseyamus or conium, the tris nitrate of bismuth, with the tr. of columbo, &c.; tincture of nux vomica and hop; cold sponging; abstinence from his favorite cigars, late suppers, and exciting company. After various vicissitudes he is now better than for years previous, but his heart still occasionally "fails him."

Uterine and Spermatorrhæal Cardiac Debility.—Among the most common of all causes of an excessively weak heart are doubtless exhausting discharges from the generative organs.

Exhausted Heart—Menorrhagia—Improvement.—A lady, aged 36, slender, very pale, with blanched lips, having previously miscarried,

consulted me in 1849 for faintness on slight exertion, palpitation, feeble tapping impulse, of an otherwise natural heart, connected with excessive and protracted menstrual discharges. These were checked by pills of acetate of lead, with powdered ergot and extract of hyoscyamus; after which, under tonic treatment, she left the city materially improved.

Weak Heart—Spermatorrhœa—Bellows Murmur—Recovery.—

A clerk, aged 22, slight, pale, with dark areola, having learned the practice of masturbation four years previous, was admitted under my care in the N. Y. Dispensary in April last, with faintness on exertion, *soft, aortic bellows murmur*, palpitation, faint tapping impulse of the heart, hurried by exercise, with feeble appetite, trembling of the limbs, and nocturnal emissions from every night to once a-week. He was ordered to sleep on a hard bed, rise early, use cold sponging, and walk regularly some distance, avoid mixed company and lascivious books; to give up all solitary practices; to irritate the loins with croton oil, and take a mixture of two drachms each of the muriated tincture of iron and the tincture of hyoscyamus, with an ounce and a half of the tincture of columbo—a teaspoonful in a wineglassful of sweetened water three times a day; and in a few weeks he left quite improved. In the heat of summer an attack of severe diarrhœa brought on temporary relapse, with the bellows murmur, from which, by the use of powders of five grains each of tris-nitrate of bismuth and gum acacia, with a grain of opium every four hours it was checked. With subsequent tonics, he soon quite recovered.

Treatment.—We have given this so fully in the cases related, that within our present narrow limits, we venture only a few brief comments. In an organ so susceptible as the heart to mental impressions, we have always, so far as a delicate regard to truth and candor would allow, avoided admitting to the patient in functional disturbance, for his own good, that the heart was at fault, mentioning the organ as little as possible, using cheerfully the phrases “nervousness,” “sensitiveness,” “palpitation,”—and of inquiring constantly about the stomach, or some other offending organ. Indeed many of the patients mentioned very soon forgot their weakest point.

Partly for this reason, it will be seen, with sedentary and nervous citizens we have very constantly prescribed that powerful, *cheap tonic* for the million—*walking*. To insure faithful obedience, and give an idea of its importance, we have usually ordered it in *measured doses* of a certain number of miles daily. After the first fortnight, nothing cheers a desponding, nervous or dyspeptic patient so much. He soon

feels, by the increased ease and comfort with which he executes his allotted task that he is really stronger. And then it relieves congestion by gradually distributing the blood to the chilly feet and hands; it gives tone to the stomach, and sometimes a voracious appetite; it is nature's laxative; it restores, by its grateful glow, the functions of the skin; it increases muscular energy; and it calms the irritable nervous system by its agreeable invigoration and the quiet sleep it begets at night; and lastly, by its gentle stimulus, it actually strengthens a weak heart. Providence has mercifully made our most necessary blessings easily accessible. Man was originally a *field animal*. Walking was the primitive exercise of our first parents in the bowers of Eden, and it is still healthier, in the main, than any other. We had occasion recently to make it a condition of attendance on a rich, fine lady, that she should, for a time, abandon her carriage for nature's locomotion, and in a few weeks we were *gratefully* obeyed.

Of great importance to the functions of the stomach, liver, nervous system, and, through them, to the disordered heart, is attention to that extensive surface, the skin. By telling delicate patients, if necessary, to retain the garments on the upper limbs, while the lower extremities are cleansed and vice versa; or, in cold damp weather, by adding a little alcohol or cheap spirit; and especially by free frictions, with a coarse towel or flannels, the most sensitive may sponge the body, on rising in the morning, with cold water at the coldest season of the year.

Of the medicinal means employed, we have only space to notice a class whose direct tonic influence upon the heart, and nervous system, we believe to be greater than any other. We refer to preparations of nux vomica, and its alkaloid, strychnia. Especially in dyspeptic complications and in excessive "debility of the heart," they are invaluable. For safety and convenience, we prefer either the strong tincture of the vomica nut or an equal quantity of the more uniform solution of the ordinary strychnia of the shops, the strength of a grain to the ounce, rendered soluble by the addition of one part of acetic acid to three of water—either preparation to be given in doses of five drops three times a day, in water, increasing cautiously, if necessary, to fifteen drops,—resting, if the tingling and twitching of "strychnism" occur, and commencing in smaller doses when they subside.

In explanation of their therapeutic effects, we may mention the beautiful recent experiment of Dr. Marshall Hall, in rousing the nervous system of the frog, stunned by division of the spinal marrow, by means of a solution of the acetate of strychnia, and the still more conclusive test of Prof. E. Weber, mentioned by Romberg, of producing

by the application of strichnia to the severed palpitating heart of the frog, *tonic contraction*.

In conclusion, we tender our grateful acknowledgments to the members of the Society of Statistical Medicine, for their kind encouragement, in completing this sketch, necessarily brief and imperfect,* but conceived, it is hoped, in their spirit, based only upon *facts*—open to candid correction, and penned in the sincere desire to regard only the teachings of nature in the interpretation of medical truth.

* We hope to supply these defects, and to add more illustrations, and a statistical analysis of cases, soon, in a small volume.

